

Improving Access to Behavioral Health Care for Remote Service Members and Their Families

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Key findings

- Remoteness from behavioral health care services affects
 many service members and their families. There are
 roughly 1.3 million individuals—some 300,000 service
 members and an additional 1 million dependents—who
 live 30 minutes or more from behavioral health care
 services. A 30-minute drive or longer substantially
 reduces how often people seek and use these services.
- Remoteness makes access to behavioral health care
 more difficult. Rural and remote service members and
 dependents face such challenges as fewer care providers, longer drive times to care facilities, limited transportation options, and, often, a stigma associated with
 mental and emotional health challenges.
- Monitoring access to care is critical for policy development. Currently, there is no systematic way to monitor policy outcomes and help leaders understand the current state of care for remote service members and military families. A monitoring system that relays individuals' drive times to care and provider availability will provide a strong foundation for policy improvement.
- Collaboration with general and primary health care providers and video conferencing can help remote service members and dependents access needed care.
 These two promising avenues for improving access to care can be implemented more widely once technical and regulatory barriers are lifted.

he invisible wounds of war—posttraumatic stress disorder (PTSD), depression, anxiety, traumatic brain injury, and drug and alcohol problems—are prevalent among today's warriors returning from Iraq and Afghanistan.¹ Deployed service members' families are bearing the effects of the conflicts, too. Their children, for example, have demonstrated higher rates of anxiety and more emotional difficulties and problems at school than other children of the same age.² And family caretakers of young post-9/11 veterans—more than 1 million to date—experience family tension and problems at work at a greater rate than their nonmilitary caretaking peers.³

The Department of Defense (DoD) recognizes behavioral health needs for service members and families. In response to these needs, DoD sponsors or funds more than 200 behavioral health–related programs.⁴ However, anecdotal reports circulating in news and other media outlets have suggested that many returning service members and their families live in rural areas that are too remote to enable the regular or easy access of needed behavioral health care assistance.⁵

In 2013, the Office of the Assistant Secretary of Defense for Health Affairs and the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury asked the RAND Corporation to address three questions:

- 1. How many service members and their dependents are remote from behavioral health care services?
- 2. How does geographical remoteness affect access to and use of behavioral health care services?
- 3. What are the gaps in current policy and practice for improving access to behavioral health care among remote service members and dependents?

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Form Approved OMB No. 0704-0188 This study answers these questions and offers a number of policy- and practice-related recommendations for improving access to care for remote service members and their families. The work may be of special interest to DoD decisionmakers, behavioral health providers, and decisionmakers in the U.S. Department of Veterans Affairs (VA).

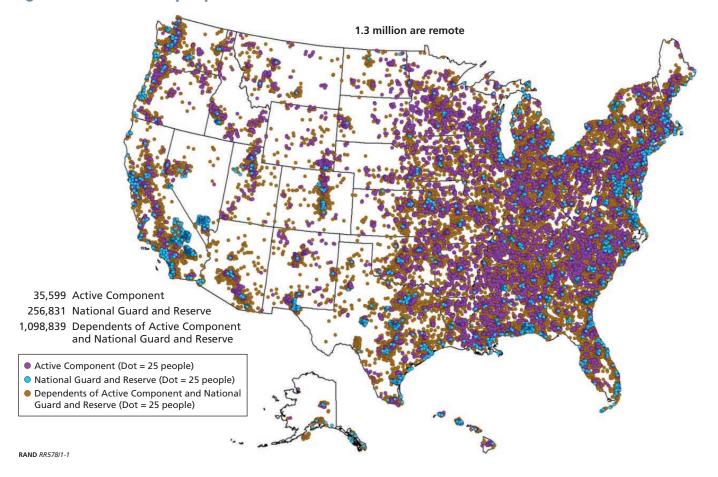
The VA and DoD more generally have several policies and programs designed to deliver behavioral health care to service members and their families living far from facilities. Before this study, however, it was unknown how well current policies were helping remotely located populations or how existing policies and services should be improved. The findings in this report show which groups of service members and families are at the greatest geographic distance from behavioral health care.

This research effort is the first to provide a national estimate of the size and scope of geographic remoteness as a problem for service members and families, and to put forward a set of recommendations based on this analysis.

POPULATION ESTIMATES, CHARACTERISTICS, AND EFFECTS OF REMOTENESS

RAND estimates that there are roughly 1.3 million individuals—some 300,000 service members and an additional 1 million dependents—who live 30 minutes or more from behavioral health care services (see Figure 1). Drive times have a substantial effect on the decision to seek behavioral health care, and research has shown that drive times exceeding 30 minutes are associated with marked decrements in utilization of care. The researchers find that remote service members and their immediate family members generally make 20 percent fewer visits to behavioral health providers. This finding correlates with earlier studies that show disparities in behavioral health care access based on geographic location.

Figure 1. Remote Military Population



Remoteness Poses Specific Challenges to Behavioral Health Care Access

Rural and remote service members are faced with several distance-related challenges when it comes to seeking and receiving behavioral health care.

- Care providers are few. Approximately 80 percent of U.S. rural areas are classified as *medically underserved*; that is, these areas are lacking the physicians, dentists, registered nurses, and other health professionals needed for care from birth to death. Health professional shortage areas (HPSAs) frequently overlap with areas experiencing a shortage of psychiatrists, psychologists, and therapists. The RAND team confirmed that many military-specific provider shortage areas overlap with HPSAs and, in some cases, extend to additional areas.
- Increased drive time reduces care-seeking. Studies examining civilian and veteran use of behavioral health care services have demonstrated that time is of the essence in care-seeking. Thus, longer travel distances to care substantially reduce how often people seek and use support. The half-hour drive time does not account for heavy traffic, inclement weather, parking challenges, and other difficulties faced by drivers; all these factors can make drive times longer and reduce an individual's desire to follow through with plans for care.
- Transportation options are limited. Rural areas in the United States are short on public transportation alternatives. Some returning service members may need such options due to disability, one-car family situations, and other circumstances.

Remoteness Is a Risk to All Service Members

Analyzing trends of service member location and behavioral care use over a five-year period—from 2007 to 2012—demonstrates that remoteness is not a static property. Military service members and families move more frequently than nonmilitary members and families as duties and duty stations change. We find that 27 percent of service members experienced at least some time in a remote area over the five-year span. This includes 10 percent of full-time active component personnel and 50 percent of National Guard and Reserve service members. This finding underscores the point that remoteness from care is a risk that any service member or dependent can encounter.

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How Was This Study Conducted?

To find out how many service members and dependents are far from behavioral health care service, researchers first conducted a geospatial analysis using service member and dependent residential location, the location of behavioral health services, and information on insurance coverage and regulations surrounding access. A drive time of 30 minutes or more determined the remoteness of military members. Second, to determine how remoteness is associated with access to and use of behavioral health care, the team reviewed evidence in veteran and civilian populations and then used the 30-minute drive rule to analyze medical claims data from TRICARE. Service member location, service, age, rank, time in service, and behavioral health care use were derived from a wide variety of geographic and health insurance data; however, the data are somewhat limited due to their sensitive nature and availability. Third, the team considered the findings in light of best practices gleaned from academic literature, white papers, and reports, as well as from DoD experts and existing programs and policies for addressing access to care among service members and dependents. Primary health care facilities were not considered in this study.

National Guard and Reserve Members Live Farthest from Care, but Active Component Service Members Are More Affected by Distance

A closer look at the data reveals remote service member characteristics. Of the 300,000 service members living 30 minutes or more from behavioral health care, roughly 260,000 of them serve in the National Guard and Reserve. The high representation of National Guard and Reserve service members in the *remote from care* category is not unexpected, because most full-time active component service members live on or near military bases. Bases frequently have behavioral health care facilities and professionals available for their personnel.

Despite the high representation of National Guard and Reserve members in the remote category, however, analyses do not show that geographic remoteness is associated with less utilization of behavioral health care in this population. Rather, according to an analysis of military health care (TRICARE) claims data, the full active component members classified as remote made up to 20 percent fewer visits to behavioral health care providers than those living closer to facilities.

There are many possible explanations for this finding. For example, National Guard and Reserve members serve part-time and are typically employed outside the military. They often have the option to use employer-based insurance coverage to pay for services outside of those offered by TRICARE.

The Army Has the Most Remotely Located Part-Time Service Members, but Coast Guard Full-Time Service Members May Experience the Effects of Care Distance More Profoundly

The Coast Guard has the most full-time active component service members living far from health care facilities. The Coast Guard has many duty stations far from military treatment facilities (MTFs) and in areas that are known HPSAs. The Army, with the most members of all the services, ranks second in this regard. Figure 2 shows the numbers and percentage of active component personnel who live 30 minutes or more from behavioral health care services.

The Reserve components consist of National Guard units in the Army and the Air Force and reserves of each of the five military services. Of the five services, the Army has the most reserve component members remotely located from behavioral health care facilities and professionals. The figures are presented in Figure 3.

Spouses and Children of Remote Service Members Are Also Affected by Remoteness

The roughly 1 million military dependents remote from behavioral health care are the spouses and children whose lives have been affected by a multistage and often traumatic deployment cycle. Research on veteran families shows that those dependents left behind during deployments go through complex, often difficult emotional stages that include anxious preparation, concern and worry during absence, and complex readjustment during the postdeployment period.⁸

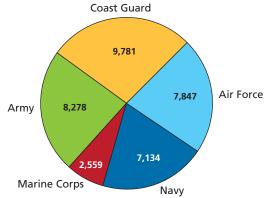
BARRIERS TO PRACTICE, GAPS IN POLICY

The research team collected information from multiple sources to understand the challenges faced by remotely located service members and their families when seeking behavioral health care. The team reviewed expert literature and current policy focused on service member behavioral health, as well as on rural-urban disparities in care. The team also conducted interviews with behavioral health care and policy experts focused on service member, veteran, and rural populations.

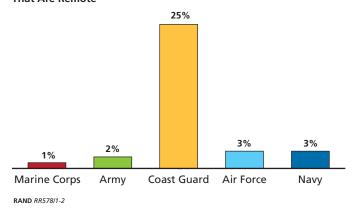
The roughly 1 million military dependents remote from behavioral health care are the spouses and children whose lives have been affected by a multistage and often traumatic deployment cycle.

Figure 2. Remote Active Component Personnel, by Service Branch





Percentage of Active Component Personnel That Are Remote

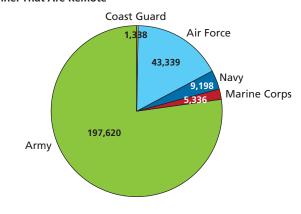


Remoteness Poses Specific Challenges to Those Seeking Care

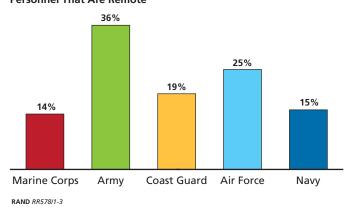
As suggested, rural service members needing or wanting behavioral health care face challenges that include a shortage of appropriate service providers, long travel times to facilities, few travel options, and cultural stigma surrounding mental and emotional challenges. Gaps in broadband service in rural and remote areas impede the use of telemental health services—a promising practice described in the next section. About 9.8 million rural residents are without access to Internet services that meet the current Federal Communications Commission working definition of basic broadband. There are some insurance-related barriers impeding the widespread use of telemental health services as well.

Figure 3. Remote National Guard and Reserve Component Personnel, by Service Branch

Number of National Guard and Reserve Personnel That Are Remote



Percentage of National Guard and Reserve Personnel That Are Remote



There Is a Lack of Readily Available Data to Understand Current Capabilities and Guide Reform

In relevant policy, references to rural and remote behavioral health for service members are not strict requirements, and the guidelines that do exist are not accompanied by a system that can monitor adherence. This makes it impossible to monitor gaps in access and problem locales. Improving access to quality care is a continuous process. A formal monitoring system in conjunction with a set of benchmarks for improving access would provide a means of assessing whether guidelines are being met.

TWO PROMISING PRACTICES

The study revealed two promising strategies that could help address access and availability barriers to behavioral health care use for military personnel and their families in rural areas. Each strategy may also increase the social acceptability of using behavioral health care.

Collaborative Care: Primary and Behavioral Health Care May Form an Effective Partnership

Research in the civilian sector has demonstrated that behavioral health treatment can be integrated successfully into primary care settings. ¹⁰ Although relatively little is known about how this partnership will work in military settings, the use of integrated treatment to address the shortage of quality behavioral health care in rural and remote areas appears initially promising. In fact, an estimated 40–60 percent of civilian patients with behavioral health conditions are currently treated in primary care rather than specialty behavioral health care settings. ¹¹ Given the relative scarcity of specialty care providers in rural and remote areas, this is even more likely to occur there.

In practice, collaborative care models are designed to improve routine screening and diagnosis of behavioral illness, to increase the use of evidence-based treatment protocols, and to foster patient goal-setting and self-management. A core component of most collaborative care approaches is the use of nonphysician staff who maintain regular contact with patients

Evidence suggests that care delivered through collaborative care models can improve behavioral health outcomes in civilian populations relative to usual treatment.

to ensure continuity of care. Care coordinator activities include assessing patient needs and goals, sharing information, engaging patients in the treatment process, ensuring that patients attend appointments, and maintaining proactive contact with patients to assess treatment barriers and monitor health outcomes.

Evidence suggests that care delivered through these models can improve behavioral health outcomes in civilian populations relative to usual treatment.¹² The strongest evidence pertains to treating depression in primary care, although recent investigations have begun to demonstrate the value of collaborative care models for treating anxiety disorders.¹³

Currently, the VA and DoD have collaborative care programs for depression. DoD's program, Re-Engineering Systems of Primary Care Treatment in the Military (RESPECT-Mil), seeks to treat either major depression or PTSD in primary care settings. RESPECT-Mil is modeled after a successful civilian-sector collaborative care program for depression and is now widely used in the U.S. Army Medical Command. An initial experimental evaluation by VA found no differences in PTSD outcomes between RESPECT-Mil and usual treatment. This research stopped short of suggesting that collaborative care models for treating PTSD are ineffective, noting that such treatment for civilian PTSD appears promising and that treatment for PTSD poses special challenges.

Telemental Health: Increased Access May Be a Mouse Click Away

Telemental health—also known as TMH, telepsychology, telepsychiatry, and telebehavioral health—has grown in popularity in recent decades. These video technology programs are unlike other web-based or "e-mental health" resources because they involve real-time, synchronous interaction with a clinician. TMH has the potential to address many barriers to care faced by patients and providers in rural settings. Providing TMH services in local clinics or patient homes may reduce the need for patients to travel to urban centers for care and may minimize the stigma associated with care. It could also protect client privacy in small communities, relieve the professional isolation of rural providers by facilitating communication with colleagues at other facilities, and improve access to evidence-based care for behavioral health conditions.

One in three service members indicates that he or she would not be willing to see a behavioral health provider for a face-to-face session but would be willing to use a technology-based behavioral health service. Moreover, video visits can help with posttraumatic stress disorder, medication management, and substance dependence.

Most service members have the technology and proficiency to use TMH services. Three in four active component and National Guard and Reserve personnel regularly use a personal computer, while one-half had a personal smart phone, and nearly all (more than 85 percent) judged themselves to be competent users of technology. One in three service members indicates that he or she would not be willing to see a behavioral health provider for a face-to-face session but would be willing to use a technology-based behavioral health service. Moreover, the VA, a leader in TMH clinical trials, has found that video visits can help with PTSD, medication management, and follow-up care for substance dependence.

Several barriers impede the widespread use of TMH. Internet technology is not available in many rural and remote areas; in fact, dial-up connectivity often continues to be the only option available because low population density and fixed infrastructure costs increase the cost per customer. The cost of TMH equipment can also be a barrier because health care providers are reluctant to invest in technology without clear evidence of a benefit.¹⁸

A recent large-scale Veterans Health Administration study of TMH collaborative care for depression in rural primary care settings determined that the intervention, while effective, was not cost-effective. In fact, costs exceeded those for other collaborative primary care interventions for depression. Yet there is a paucity of rigorous studies on TMH cost-effectiveness, and telehealth cost-effectiveness more generally, and additional research should be conducted before pursuing this option further.

There are a few coverage and reimbursement barriers specific to this telehealth treatment. For example, TRICARE policy mandates two standards of care for reimbursement of

telehealth services: (1) providers of TMH services must have video technology equipment that meets or exceeds American Telemedicine Association standards, and (2) telephone-only interventions are not approved for coverage or reimbursement.

RECOMMENDATIONS: THREE STEPS TO MOVING FORWARD

The results of this analysis point to two related veins of reform. The first one deals with *data infrastructure refinement*. There is a deep need to systematically monitor the access to and quality of behavioral health care for military personnel and dependents living in rural areas. The second vein of reform concerns *behavioral health care capability-building* for remote service members and dependents. This can only be done correctly, however, if the data are there to help leaders understand and monitor the current state. Meaningful data on the effectiveness of existing structures and processes can serve as a strong foundation for policy improvements in MTFs, as well as in purchased care networks.

These two related focuses for reform—data refinement and capability-building—can be addressed simultaneously through three steps:

- Establish clear policies for enhancing access to behavioral health services among remote service members and their dependents.
 - Set an official standard of a maximum 30-minute drive to behavioral health specialty care for service members and dependents.

Implementing these recommendations will require immediate and sustained action in DoD policies, infrastructure, and practices. Policy should reflect clear standards of access to care and the necessity of monitoring and making progress toward these standards.

- Work quickly on closing the gap for active component service members, as a target near 100-percent access to behavioral health specialty care within the United States is within reach.
- Set goals for increasing access for National Guard and Reserve service members and military dependents.

2. Monitor implementation of these policies.

- Establish the computing infrastructure and data visualization capabilities to support an interactive data portal to monitor access to care for service members and dependents.
- Make this monitoring system part of a larger effort to develop, test, and assess alternative methods of delivery for behavioral health care in remote settings.
- Support this monitoring effort by requiring regional managed care contractors to share their provider database with DoD, and to regularly update this database and provide all required data fields, to the best of their ability, which will make monitoring access to care outside of MTFs feasible.

3. Take steps to improve remote behavioral health care.

- Remove outdated technical and regulatory barriers to telemental health and collaborative care approaches to behavioral health within the military health system.
- Continue to innovate and collect systemwide evidence on the effectiveness of TMH and collaborative care treatment in military populations.
- Feed the collected evidence back into monitoring systems so that it can systematically improve both access to and quality of care.

Implementing these recommendations will require immediate and sustained action in DoD policies, infrastructure, and practices. Policy should reflect clear standards of access to care and the necessity of monitoring and making progress toward these standards. In the meantime, the requirements of a monitoring system must be carefully outlined so that this system can be constructed and maintained once it is mandated by policy. Finally, innovation in strategies to improve access to care in remote areas must continue, along with the removal of barriers to TMH and collaborative care.

Monitoring Systems Can Help Improve Access

A monitoring system that tracks access to care is the only way to know whether improvements in access are being made. Furthermore, developing and tailoring strategies for improving behavioral health care access can be aided by a monitoring system that provides regional, state, or local information on populations in need. For example, areas with VA facilities and large numbers of remote National Guard and Reserve service members could be assisted by greater VA outreach and service provision. Areas with very few facilities may require military treatment providers to physically rotate through community clinics on certain days of the week or month, while other areas with basic telehealth capabilities could be assisted through better telehealth networking between primary care physicians and specialty behavioral health providers.

It would be useful to build an interactive data portal that includes data streams of information on processes and outcomes as they become available. Such data streams would include:

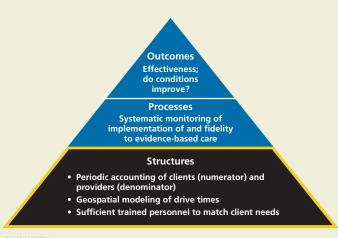
- Types of behavioral health providers. The information should include MTF and community providers. Types include psychiatrists, psychologists, clinical social workers, and others.
- Training and specialty of providers. This information
 would include if a person is focused, for example,
 in child therapy, addiction psychiatry, or specific
 evidence-based procedures; the training level helps
 determine the experience level.
- Tallies of providers at MTFs and community providers.
- Availability of specific evidence-based procedures at MTFs and community providers.
- Client population needs. These include existing patterns of diagnoses, projections of unmet needs

- based on epidemiologic studies, and projections of future needs based on changing patterns of combat exposure or other factors.
- Availability of effective care. The portal should include procedures (and practitioners or facilities) that are successful at managing and reducing symptoms.
- Local telehealth connection availability.

The base of the pyramid in Figure 4 shows that initial efforts in developing a monitoring system would focus on identifying whether the right basic structures are in place to provide adequate access for service members and dependents; further efforts would ensure that the appropriate processes and outcomes were also being achieved.

Of course, developing a system to monitor access to and quality of behavioral health care is only part of a larger endeavor to build the appropriate capabilities to ensure that service members and dependents receive the behavioral health care they need.

Figure 4. Monitoring Structures, Processes, and Outcomes



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NOTES

- ¹ Tanielian, Terri, Lisa H. Jaycox, David M. Adamson, M. Audrey Burnam, Rachel M. Burns, Leah B. Caldarone, Robert A. Cox, Elizabeth D'Amico, Claudia Diaz, Christine Eibner, Gail Fisher, Todd C. Helmus, Benjamin R. Karney, Beau Kilmer, Grant N. Marshall, Laurie T. Martin, Lisa S. Meredith, Karen N. Metscher, Karen Chan Osilla, Rosalie Liccardo Pacula, Rajeev Ramchand, Jeanne S. Ringel, Terry L. Schell, Jerry M. Sollinger, Mary E. Vaiana, Kayla M. Williams, and Michael R. Yochelson, *Invisible Wounds of War: Psychological and Cognitive Injuries, Their Consequences, and Services to Assist Recovery*, Santa Monica, Calif.: RAND Corporation, MG-720-CCF, 2008. As of May 15, 2014: http://www.rand.org/pubs/monographs/MG720; Cerully, Jennifer L., Mustafa Oguz, Heather Krull, and Kate Giglio, *Health and Economic Outcomes Among the Alumni of the Wounded Warrior Project: 2013*, Santa Monica, Calif.: RAND Corporation, RR-522-WWP, 2014. As of December 15, 2014: http://www.rand.org/pubs/research_reports/RR522.html
- ² Chandra, Anita, Sandraluz Lara-Cinisomo, Lisa H. Jaycox, Terri Tanielian, Bing Han, Rachel M. Burns, and Teague Ruder, *Views from the Homefront: The Experiences of Youth and Spouses from Military Families*, Santa Monica, Calif.: RAND Corporation, TR-913-NMFA, 2011. As of December 10, 2014: http://www.rand.org/pubs/technical_reports/TR913
- ³ Ramchand, Rajeev, Terri Tanielian, Michael P. Fisher, Christine Anne Vaughan, Thomas E. Trail, Caroline Epley, Phoenix Voorhies, Michael Robbins, Eric Robinson, and Bonnie Ghosh-Dastidar, *Hidden Heroes: America's Military Caregivers*, Santa Monica, Calif.: RAND Corporation, RR-499-TEDF, 2014. As of December 10, 2014: http://www.rand.org/pubs/research_reports/RR499
- ⁴ Weinick, Robin M., Ellen Burke Beckjord, Carrie M. Farmer, Laurie T. Martin, Emily M. Gillen, Joie Acosta, Michael P. Fisher, Jeffrey Garnett, Gabriella C. Gonzalez, Todd C. Helmus, Lisa H. Jaycox, Kerry Reynolds, Nicholas Salcedo, and Deborah M. Scharf, *Programs Addressing Psychological Health and Traumatic Brain Injury Among U.S. Military Servicemembers and Their Families*, Santa Monica, Calif.: RAND Corporation, TR-950-OSD, 2011. As of May 7, 2014: http://www.rand.org/pubs/technical_reports/TR950
- ⁵ Lazare, Sarah, "The Military's Hidden Mental Health Crisis: Spousal Trauma," Al-Jazeera America, November 15, 2013. As of March 30, 2014: http://america.aljazeera.com/articles/2013/11/13/the-military-s-hiddenhealthcrisis.html
- 6 White, Stephen L., "Travel Distance as Time Price and the Demand for Mental Health Services," Community Mental Health Journal, Vol. 22, No. 4, December 1986, pp. 303–313; Beardsley, Kyle, Eric D. Wish, Dawn Bonanno Fitzelle, Kevin O'Grady, and Amelia M. Arria, "Distance Traveled to Outpatient Drug Treatment and Client Retention," Journal of Substance Abuse Treatment, Vol. 25, No. 4, December 2003, pp. 279–285. The same is true of veterans (Fortney, J. C., A. Elizabeth Lancaster, Richard R. Owen, and Mingliang Zhang, "Geographic Market Areas for Psychiatric and Medical Outpatient Treatment," The Journal of Behavioral Health Services & Research, Vol. 25, No. 1, February 1998, pp. 108–116; Schmitt, Susan K., Ciaran S. Phibbs, and John D. Piette, "The Influence of Distance on Utilization of Outpatient Mental Health Aftercare Following Inpatient Substance Abuse Treatment," Addictive Behaviors, Vol. 28, No. 6, August 2003, pp. 1183–1192; McCarthy, John F., Frederic C. Blow, Marcia Valenstein, Ellen P. Fischer, Richard R. Owen, Kristen L. Barry, Teresa J. Hudson, and Rosalinda V. Ignacio, "Veterans Affairs Health System and Mental Health Treatment Retention Among Patients with Serious Mental Illness: Evaluating Accessibility and Availability Barriers," Health Services Research, Vol. 42, No. 3, Part 1, 2007, pp. 1042–1060; Pfeiffer, Paul N., Joseph Glass, Karen Austin, Marcia Valenstein, John F. McCarthy, and Kara Zivin, "Impact of Distance and Facility of Initial Diagnosis on Depression Treatment," Health Services Research, Vol. 46, No. 3, 2011, pp. 768–786).
- White, 1986; Beardsley et al., 2003; Fortney et al., 1998; Schmitt, Phibbs, and Piette, 2003; McCarthy et al., 2007; and Pfeiffer et al., 2011.
- ⁸ Lester, Patricia, and Lieutenant Colonel Eric Flake, "How Wartime Military Service Affects Children and Families," *Military Children and Families*, Vol. 23, No. 2, 2013, pp. 121–141.
- ⁹ Kuttner, Hanns, "Broadband for Rural America: Economic Impacts and Economic Opportunities," 2012. As of March 30, 2014: http://www.nheconomy.com/uploads/RuralTelecom-Kuttner--1012.pdf; Federal Communications Commission, *Sixth Broadband Deployment Report: A National Broadband Plan for Our Future*, FCC 10-129, 2010. As of March 30, 2014: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-129A1.pdf
- ¹⁰ Butler, Mary, Robert L. Kane, Donna McAlpine, Roger G. Kathol, Steven S. Fu, Hildi Hagedorn, and Timothy J. Wilt, *Integration of Mental Health/Substance Abuse and Primary Care*, Evidence Report/Technology Assessment Number 173, U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, 2008.

- ¹¹ Kessler, Rodger, and Dale Stafford, "Primary Care *Is* the de Facto Mental Health System," *Collaborative Medicine Case Studies*, Springer New York, 2008, pp. 9–21. As of July 30, 2014: http://rd.springer.com/chapter/10.1007/978-0-387-76894-6_2; Wang, Philip S., M. Lane, M. Olfson, H. A. Pincus, K. B. Wells, and R. C. Kessler, "Twelve-Month Use of Mental Health Services in the United States: Results from the National Comorbidity Survey Replication," *Archives of General Psychiatry*, Vol. 62, No. 6, June 2005, pp. 629–640; Wang, Philip S., Olga Demler, Mark Olfson, Harold Pincus, Kenneth Wells, and Ronald Kessler, "Changing Profiles of Service Sectors Used for Mental Health Care in the United States," *American Journal of Psychiatry*, Vol. 163, No. 7, 2006, pp. 1187–1198.
- ¹² Woltmann, Emily, Andrew Grogan-Kaylor, Brian Perron, Hebert Georges, Amy M. Kilbourne, and Mark S. Bauer, "Comparative Effectiveness of Collaborative Chronic Care Models for Mental Health Conditions Across Primary, Specialty, and Behavioral Health Care Settings: Systematic Review and Meta-Analysis," *American Journal of Psychiatry*, Vol. 169, No. 8, 2012, pp. 790–804.
- ¹³ Thota, Anilkrishna B., Theresa Ann Sipe, Guthrie J. Byard, Carlos S. Zometa, Robert A. Hahn, Lela R. McKnight-Eily, Daniel P. Chapman, Ana F. Abraido-Lanza, Jane L. Pearson, and Clinton W. Anderson, "Collaborative Care to Improve the Management of Depressive Disorders: A Community Guide Systematic Review and Meta-Analysis," *American Journal of Preventive Medicine*, Vol. 42, No. 5, 2012, pp. 525–538; Craske, Michelle G., Murray B. Stein, Greer Sullivan, Cathy Sherbourne, Alexander Bystritsky, Raphael D. Rose, Ariel J. Lang, Stacy Welch, Laura Campbell-Sills, and Daniela Golinelli, "Disorder-Specific Impact of Coordinated Anxiety Learning and Management Treatment for Anxiety Disorders in Primary Care: CALM Treatment for Anxiety Disorders," *Archives of General Psychiatry*, Vol. 68, No. 4, 2011, pp. 378–388; Roy-Byrne, Peter P., Michelle G. Craske, Murray B. Stein, Greer Sullivan, Alexander Bystritsky, Wayne Katon, Daniela Golinelli, and Cathy D. Sherbourne, "A Randomized Effectiveness Trial of Cognitive-Behavioral Therapy and Medication for Primary Care Panic Disorder," *Archives of General Psychiatry*, Vol. 62, No. 3, 2005, pp. 290–298.
- ¹⁴ Schnurr, Paula P., Matthew J. Friedman, Thomas E. Oxman, Allen J. Dietrich, Mark W. Smith, Brian Shiner, Elizabeth Forshay, Jiang Gui, and Veronica Thurston, "RESPECT-PTSD: Re-Engineering Systems for the Primary Care Treatment of PTSD, A Randomized Controlled Trial," *Journal of General Internal Medicine*, Vol. 28, No. 1, 2013, pp. 1–9.
- ¹⁵ Zatzick, Douglas, Peter Roy-Byrne, Joan Russo, Frederick Rivara, RoseAnne Droesch, Amy Wagner, Chris Dunn, Gregory Jurkovich, Edwina Uehara, and Wayne Katon, "A Randomized Effectiveness Trial of Stepped Collaborative Care for Acutely Injured Trauma Survivors," *Archives of General Psychiatry*, Vol. 61, No. 5, May 2004, pp. 498–506.
- ¹⁶ Bush, Nigel E., Nicole Fullerton, Rosa Crumpton, Melinda Metzger-Abamukong, and Emily Fantelli, "Soldiers' Personal Technologies on Deployment and at Home," *Telemedicine and e-Health*, Vol. 18, No. 4, 2012, pp. 253–263.
- ¹⁷ Wilson, Jaime A. B., Kristin Onorati, Matt Mishkind, Mark A. Reger, and Gregory A. Gahm, "Soldier Attitudes About Technology-Based Approaches to Mental Health Care," *CyberPsychology and Behavior*, Vol. 11, No. 6, 2008, pp. 767–769.
- ¹⁸ Moffatt, J. J., and D. S. Eley, "Barriers to the Up-Take of Telemedicine in Australia: A View from Providers," *Rural and Remote Health*, Vol. 11, No. 1, 2011, pp. 1581–1587; Tracy, Joseph, Karen Rheuban, Robert J. Waters, Mary DeVany, and Pamela Whitten, "Critical Steps to Scaling Telehealth for National Reform," *Telemedicine and e-Health*, Vol. 14, No. 9, 2008, pp. 990–994.
- ¹⁹ Pyne, Jeffrey M., John C. Fortney, Shanti Prakash Tripathi, Matthew L. Maciejewski, Mark J. Edlund, and D. Keith Williams, "Cost-Effectiveness Analysis of a Rural Telemedicine Collaborative Care Intervention for Depression," *Archives of General Psychiatry*, Vol. 67, No. 8, 2010, pp. 812–821.

About This Report

Concerns about access to behavioral health care for military service members and their dependents living in geographically remote locations prompted research into how many in this population are remote and the effects of this distance on their use of behavioral health care. The authors conducted geospatial and longitudinal analyses to answer these questions and reviewed current policies and programs to determine barriers and possible solutions.

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